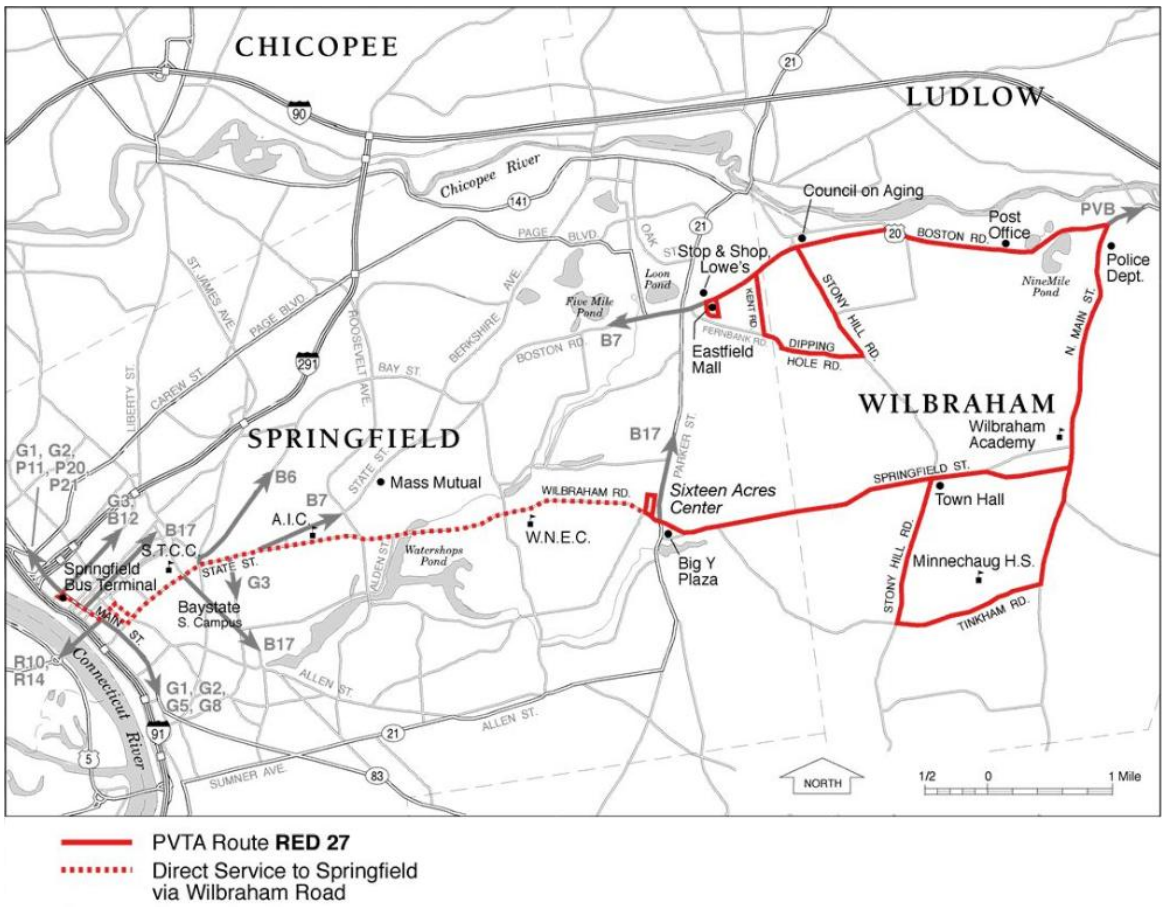
Route Evaluation

27 WILBRAHAM EASTFIELD MALL SIXTEEN ACRES

Service Design. Route 27 is a limited-service rural route that provides Wilbraham residents with weekday connections to Eastfield Mall, Sixteen Acres Center, and Springfield Bus Terminal. (see Figure 1).

FIGURE 1 – ROUTE MAP



System Interaction and Transfer Opportunities. Some trips on Route 27 travel into the Springfield Bus Terminal (SBT) and on these trips passengers can connect to the rest of the PVTA system. In addition, on-street transfers can be made between Route 27 to Route 7 at Eastfield Mall and to Route 17 at Big Y Plaza. Both connecting routes provide local service in Springfield.

Alignment/Service Patterns. There are five trips per day on Route 27. All of them serve some combination of the Eastfield Mall, Sixteen Acres and destinations in Wilbraham. However, none of the five trips follow the exact same alignment. Generally speaking, the five individual trips:

- 6:35 AM departure from Fernbank Road traveling to Sixteen Acres and the SBT
- 7:25 AM trip departing from Fernbank Road traveling to the Eastfield Mall, Wilbraham Center and to the SBT via Sixteen Acres
- 11:30 AM trip beginning at Sixteen Acres and ending at Eastfield Mall
- 4:30 PM trip beginning at SBT and traveling to the Eastfield Mall via Sixteen Acres
- 6:00 PM trip beginning at the Mall and traveling to the SBT via Wilbraham Police Station and Sixteen Acres

Service Schedule. Route 27 operates on weekdays only with five trips per day (See Figure 2) between 6:30 AM and 6:00 PM. Some of the trips are interlined and circle back to the similar locations, so may be considered the same trip. But in nearly every case, the trips do not quite make a full loop and thus for this analysis are considered as independent trips.

FIGURE 2 – SCHEDULE OVERVIEW

SERVICE DAY	SPAN OF SERVICE	TYPICAL FREQUENCY (PEAK / OFF-PEAK)	DAILY TRIPS WESTBOUND / EASTBOUND
Weekday	6:30 AM – 6:00 PM	Irregular	5 All day

Source: PVTA route schedules.

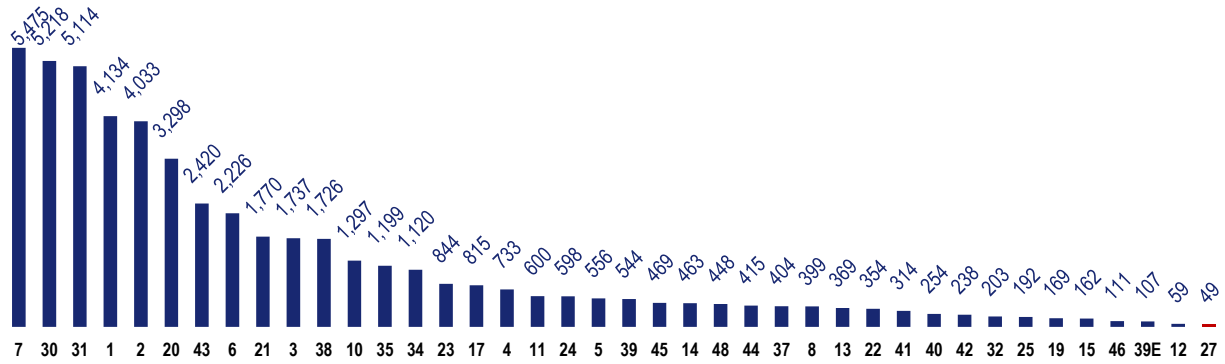
Ridership by Service Day. Route 27 carries 49 daily passengers, or about 8 riders per trip. The route has the lowest average weekday ridership among all PVTA routes and the average ridership per trip is about a third of the system-wide average of 23.4 weekday passengers per trip (see Figure 3 and Figure 4).

FIGURE 3 – RIDERSHIP STATISTICS

SERVICE DAY	AVERAGE RIDERSHIP PER DAY	AVERAGE RIDERSHIP PER TRIP	
	Route 27	**Route 27**	**System Avg**
Weekday	49	8.1	23.4

Source: PVTA performance data.

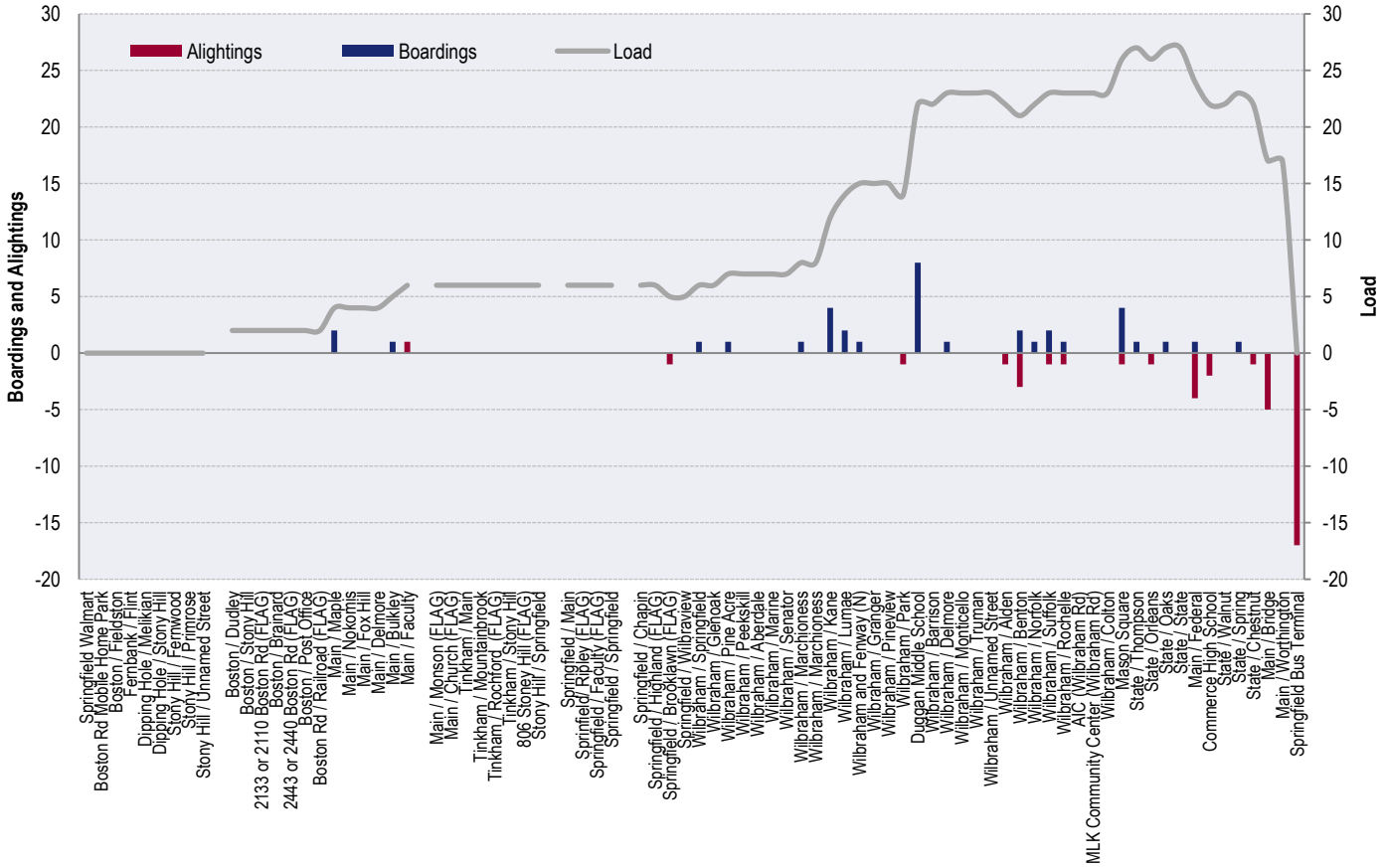
FIGURE 4 – AVERAGE WEEKDAY RIDERSHIP



Ridership by Stop. Ridership by stop data (see Figures 5 and 6) shows that Route 27 functions as two separate routes; a rural route for trips within Wilbraham and a regional link between Wilbraham and downtown Springfield and the SBT. The data shows very little ridership along the rural portion of the route (Boston Road, Main Street, and Springfield Street in Wilbraham) but considerably more riders on the portion of the route between Sixteen Acres Center and Springfield Bus Terminal. This portion of the alignment is very similar to Route 17.

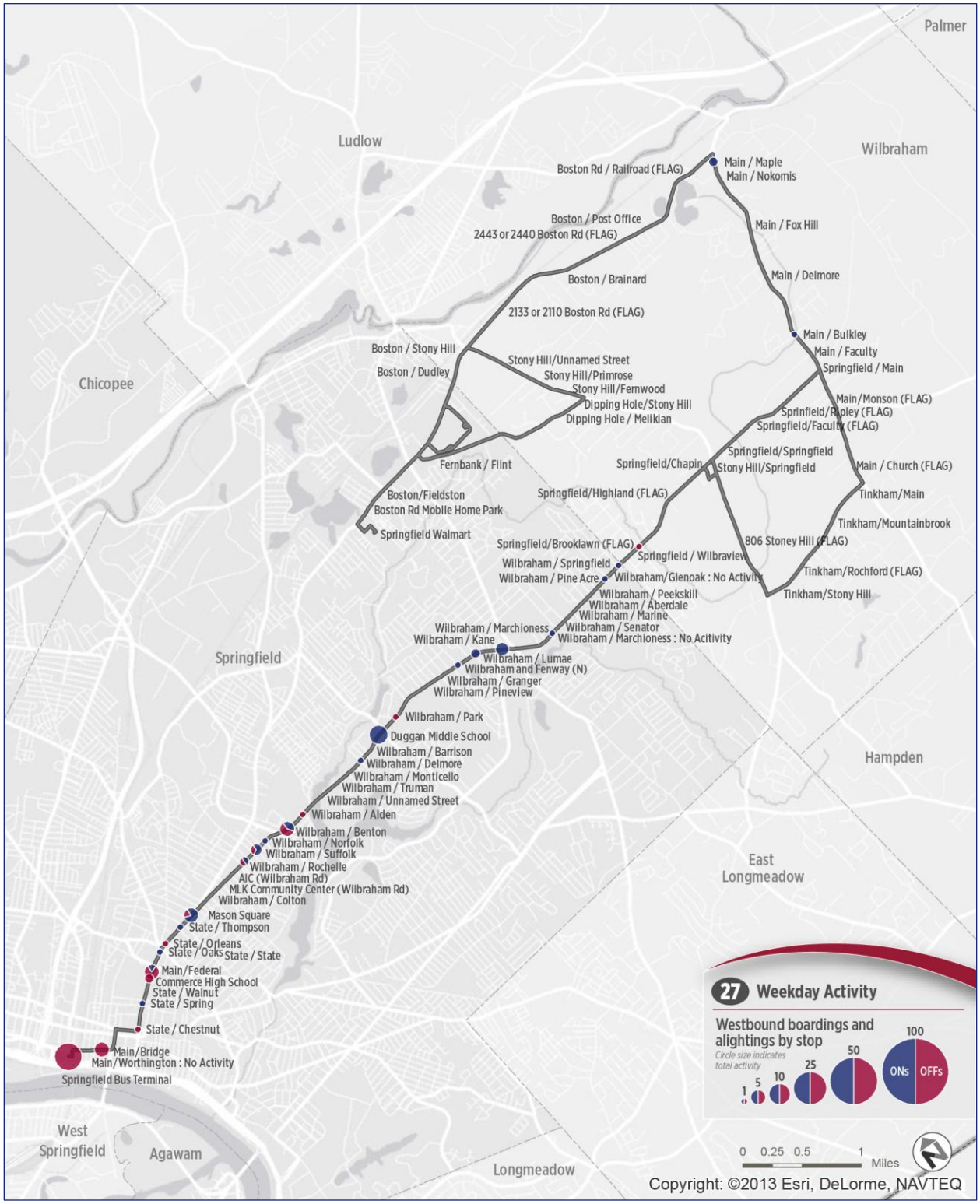
The stop at Duggan Middle School has the highest ridership outside of SBT with 8 daily boardings.

FIGURE 5 – WEEKDAY WESTBOUND RIDERSHIP BY STOP GRAPH*



**Ridership data is not available at Eastfield Mall bus stop, which presumably has high ridership activity*

FIGURE 6 – WEEKDAY WESTBOUND RIDERSHIP BY STOP MAP



Weekday Ridership by Trip. As discussed, demand on Route 27 is quite low. Data for several of the trips is also unavailable, thus the analysis shown is indicative only. The available data shows that the first trip of the day, departing from Fernbank Road and traveling to the SBT has the highest ridership with over 25 riders (see Figure 7). Eastbound ridership also appears to be very low, but ridership data was not available for the 4:30 PM trip from SBT, which is likely the highest ridership eastbound trip (see Figure 8). In both cases, a full set of productivity data is available for Route 27, even without a complete data set, average ridership is low.

The maximum load recorded on any trip was 20 passengers. Therefore there are no capacity issues on Route 27.

FIGURE 7 – WEEKDAY WESTBOUND RIDERSHIP BY TRIP

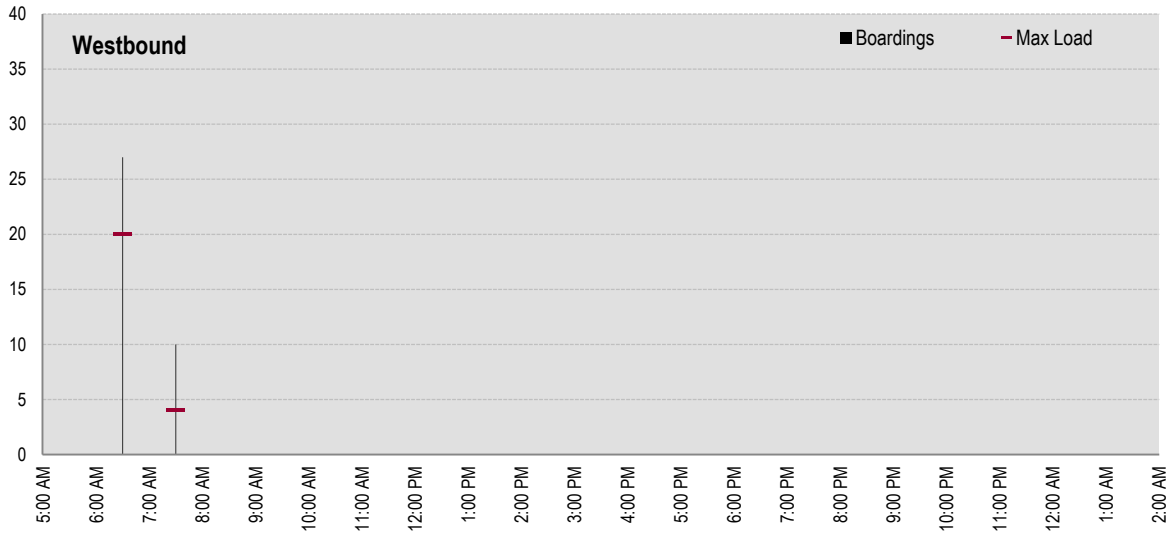
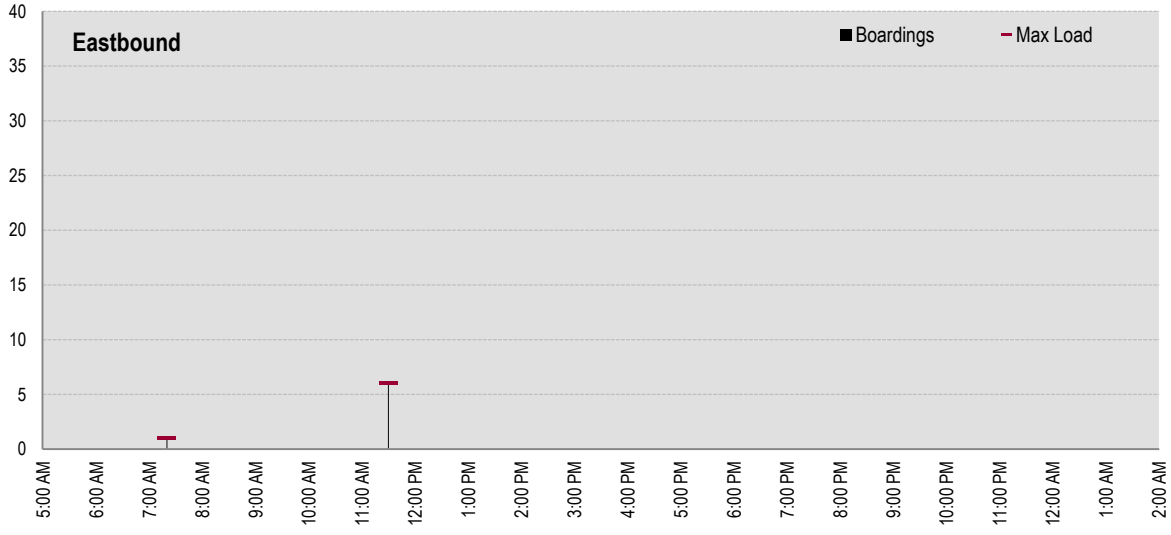


FIGURE 8 – WEEKDAY EASTBOUND RIDERSHIP PER TRIP



**Ridership data is not available for the evening trips at 4:30PM and 6:00 PM*

Performance. Route 27 performs poorly with high operating costs per passenger and low passengers per hour or mile (see Figure 10 through 12). This is the second most expensive route to operate on a cost per passenger basis, at $5.17 per passenger, more than twice the system average of $2.05.

FIGURE 9 – PERFORMANCE MEASURES

PERFORMANCE MEASURE	WEEKDAY	
	ROUTE 27	SYSTEM AVG
Operating Cost per Passenger (gross)	$5.17	$2.05
Passengers per Revenue Vehicle Hour	19.7	32.9
Passengers per Revenue Vehicle Mile	1.0	2.6

Source: PVTA performance data.

FIGURE 10 – WEEKDAY OPERATING COST PER PASSENGER

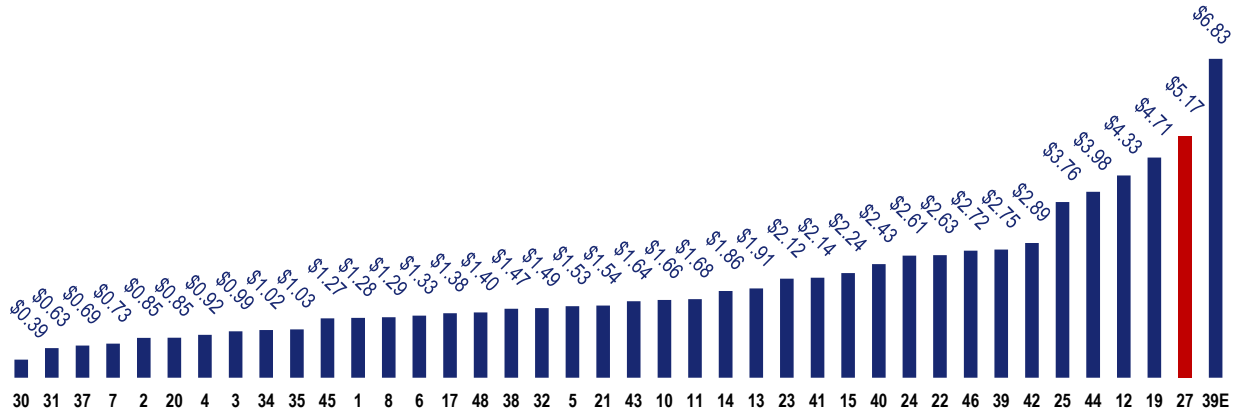
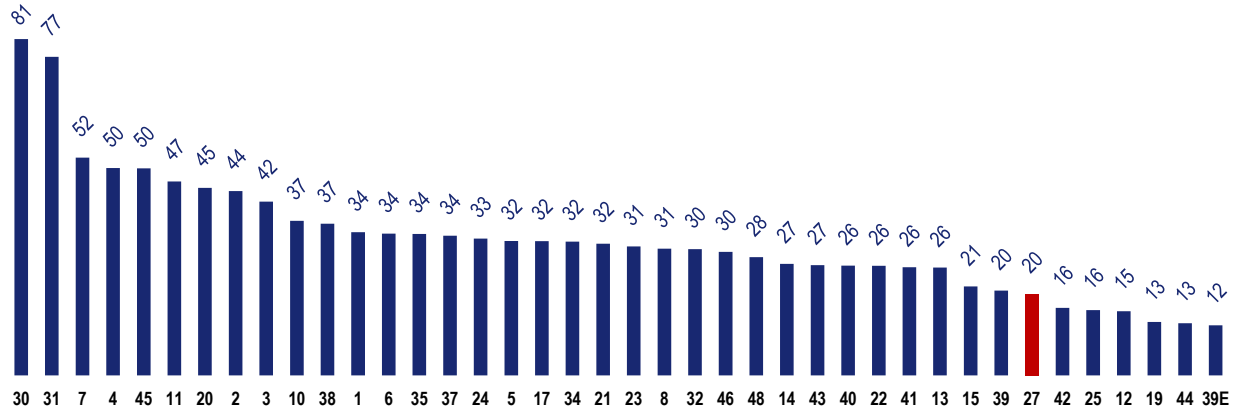


FIGURE 11 – WEEKDAY PASSENGERS PER REVENUE HOUR



SERVICE IMPROVEMENT OPTIONS

Route 27 is a low performing route with very limited service. However, it is the only fixed-route transit option operated by PVTA in Wilbraham. Opportunities to improve Route 27 include:

- **Consider park & ride near Sixteen Acres Center.** Route 27 offers a one-seat connection from various points in Wilbraham to downtown Springfield. However ridership data shows that very few people are utilizing the service in Wilbraham, opting instead to board the route near the Sixteen Acres Center. Some riders are likely parking at the Sixteen Acres branch library or other near-by parking lots to access Route 27 or 17 to Springfield. An officially sanctioned park & ride in the area could be promoted by PVTA to attract more riders. The park & ride could be co-located with the library or Greenleaf Community Center, which share a large parking lot.
- **Operate route as a deviated fixed-route service between Eastfield Mall and Sixteen Acres Center only and coordinate schedules with Routes 7 and 17.** The Route 27 schedule is highly complex and offers limited services, so it is very difficult to understand and use. Ridership on the portions of the route where service is limited is also low. Rather than trying to serve several neighborhoods with infrequent service, it would be more effective to stick to a consistent alignment and offer more service and connections with other PVTA routes. Options include:
  - Creating a deviated fixed-route along Boston Road, Main Street, and Springfield Street and connect with PVTA Routes 7 and 17.
  - Connect Wilbraham Center with the Eastfield Mall. The Mall is the largest, closest destination to Wilbraham Center and passengers can transfer from here to other PVTA routes, including connecting service to Sixteen Acres.
  - Connect Wilbraham Center with Sixteen Acres. This is also a fairly well used stop, largely because of the Middle School. Service to Sixteen Acres could also be used to connect to other PVTA routes, with transfers available to either the Eastfield Mall or downtown Springfield.
- **Increase visual presence of route with bus stop signs and shelters.** There are only a handful of bus stop signs along Route 27 in Wilbraham. Increasing the visual presence of the route with information about bus arrival times could increase awareness of the service and help attract riders.
- **Eliminate route.** Route 27 has low ridership and poor productivity and the segments of the route that have decent ridership are provided by other services. Thus, the route could be eliminated with resources better utilized in other parts of the system.
- **Consider transit needs of Wilbraham independently.** Wilbraham is currently served by a hodgepodge of services that provide some connections to key destinations but do so in an inconsistent and difficult to understand manner. To best serve the residents of Wilbraham, the next step may be to work with the community directly to determine if they are best served by a community bus, connections to Springfield, connections to outlying destination such as the Eastfield Mall or other services.